Institute of Engineering and Technology

Dr. Shakuntala Misra National Rehabilitation University, Lucknow

1st Sessional examination 2022-23

Course Name: - B.Tech (1st Year) **Semester: -I**

Paper Name: -Basic. electrical engg. **Paper Code: -TES 102**

Time - 1Hrs + 15 minutes per hour extra time for V.I. & examinees with writer. **Max Marks-20**

समय– 1 घण्टे+ 15मिनटप्रति घंटेअतिरिक्त–दृष्टिबाधित एवंसहलेखकपरीक्षार्थियों के लिए। **अधिकतम अंक–20**

Instructions:

- The question paper consists of three sections namely A, B, C. All sections are compulsory.
- Section A- Each question carries **01** marks. All questions are compulsory.
- Section B- Answer any **5 out of 6** given questions in maximum hundred **(50) words**. Each question carries **2 marks**.
- Section C- Answer any **1 out of 2** given questions in maximum onehundred fifty **(150) words**. Each question carries **5 marks**.

निर्देश:

- प्रश्न पत्र में तीन खण्ड अ, ब, व स हैं। सभी खण्ड अनिवार्य हैं।
- खण्ड–अ में प्रत्येक प्रश्न **1** अंक का है। सभी प्रश्न अनिवार्य हैं।
- खण्ड–ब में **6** प्रश्नों में से किन्हीं **5** प्रश्नों के उत्तर अधिकतम पचास **(50) शब्दों** में दें। प्रत्येक प्रश्न **2** अंक का है।
- खण्ड–स में **2** प्रश्नों में से किसी **1** प्रश्न के उत्तर अधिकतम एक सो प्चास**(150) शब्दों** में दें। प्रत्येक प्रश्न **5** अंक का है।

Section – A (खण्ड–अ)

Objective Questions(वस्तुनिष्ठप्रश्न)

1. Answer allthe following questions. **5×1=05**

निम्नलिखित सभी प्रश्न अनिवार्य हैं।

Z = 1900
P = 4

(i) What is responsible for the current to flow?
a) Protons b) Electrons
c) Nucleus Protons and Electrons

(ii)Internal resistance of ideal voltage source
a) 0 b) infinite
c) Constant d) none

(iii)) Internal resistance of the ideal current source
a) 0 b) Infinite
c) Constant d) none

(v)Transformer operate in case of
a) AC b)DC
c) both a & b d) none

(v) Constant loss in transformer is
a) Core loss b) copper loss
c) Both a& b d) none

Section – B (खण्ड–ब)

Short Answer Questions (लघुउत्तरीय प्रश्न)

2. Answer any five of the following questions in maximum 50 words. 5×2=10

निम्नलिखित में से किन्हीं 5 प्रश्नों के उत्तर अधिकतम 50 शब्दों में दें।

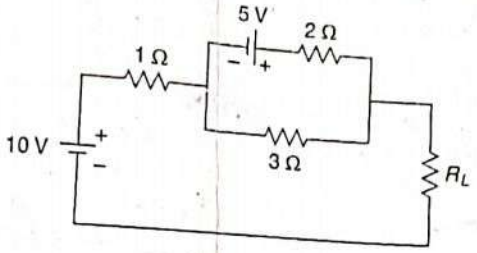
(i) Write Practical voltage source and a practical current source with proper circuit notation.

(ii) Define Kirchhoff's Current Law and Kirchhoff's Voltage Law.

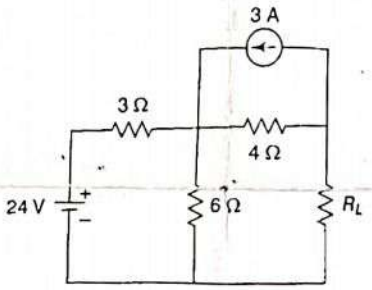
(iii) Write final equation for Star to Delta Transformation.

(iv) Derive maximum power transfer theorem having a voltage source V and internal resistance R1 and series load resistance R2

(v) State Thevenin's theorem and Find the Thevenin's equivalent circuit across R_L, in given below circuit.



(vi) State Norton's theorem and Find the Norton's equivalent circuit across R, in given below circuit



Section – C (खण्ड–स)

Descriptive Questions(विवरणात्मकप्रश्न)

3. Answer any 01 question of the following question in maximum 150 words. 1×5=05

निम्नलिखित में से किन्हीं 1 प्रश्न के उत्तर अधिकतम 150 शब्दों में दें।

(i) (a) Draw the equivalent circuit diagram of the transformer with proper nomenclature.

(b) Draw the BH curve and explain nonlinear and saturation.

(ii) (a) Differentiate between the electrical circuit and magnetic circuit?

(b) Find the maximum power transfer through resistance RL